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Air Pollution from Nearby Traffic and Children's Health: Information for Childcare Providers

Spending a lot of time near roadways with high traffic can be a potential health hazard. This fact sheet has been prepared by the Office of Environmental Health Hazard Assessment (OEHHHA), the California Air Resources Board (ARB), and the California Department of Health Services (DHS) to help childcare providers understand the issues related to traffic pollution and children's health.

Topics

- ❖ Concerns about air pollution from traffic
- ❖ Places of exposure
- ❖ What can be done to reduce exposure
- ❖ Additional information
- ❖ Resources

❖ Why is there concern about air pollution from nearby traffic?

Scientists have found that the exhaust from cars, trucks, and buses contains chemicals that can be harmful. Also, chemicals from vehicle exhaust can combine in the air outdoors to form smog and soot.

Air pollution can cause breathing problems and asthma attacks and contributes to risk of heart attacks among people with heart disease. Some of the chemicals from vehicle exhaust may contribute to risk of cancer.

Recent studies in the US and abroad have found that children living near busy roads may have more asthma symptoms and bronchitis. The Office of Environmental Health Hazard Assessment (OEHHHA) obtained similar results in a recent health study of school children in Alameda County.

It makes sense to reduce children's exposures to air pollution from nearby traffic whenever possible. Children are particularly vulnerable to air pollution impacts due to their rapid lung development and increased amount of time spent outdoors.

Also, outdoor air pollutants enter indoor spaces through open windows and doors, ventilation systems, and infiltration through cracks and leaks.

❖ Where are people exposed to air pollution from traffic?

Traffic emissions are higher where there are higher numbers of cars and trucks. We breathe in higher levels of traffic pollutants when:

- Driving (or stalled) in heavy traffic, such as on main city streets, highways, and freeways.
- Standing near idling cars, trucks, or buses.
- Spending time at locations within 500 feet of a road with high traffic, especially places "downwind" of busy roadways. ("Downwind" means that the wind generally blows from the road towards your location.) For more advice on pollution near busy roadways, ask your local air district.
- Since young children may spend a significant part of the day in childcare, exposures at childcare centers both indoors and outdoors can be an important part of a child's overall exposure to traffic pollutants.





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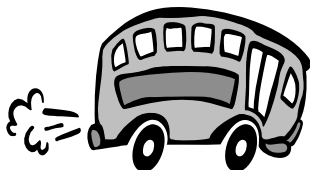


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❖ **As a childcare provider, what can I do at my center to reduce children's exposures to air pollution from traffic?**

- Establish a policy to minimize idling of cars at drop-off and pick-up areas at your childcare center.
- Locate outdoor play areas away from traffic if possible. When walking on fieldtrips, choose streets with less traffic if possible.
- If your center is near a busy road, close windows and doors during peak traffic hours, but assure sufficient air circulation. Where a window air conditioner is in use, set it on "re-circulate" if that option is available. (Most central heating and air conditioning systems in homes recirculate the air by design.)
- Upgrade the air filters in central heating and cooling systems in both private residences and public buildings to the highest efficiency rating that the system can handle (check the manufacturer's manual first). Common filters are fairly inefficient, but most systems can handle medium efficiency, pleated filters (30-60% efficient), which are not very expensive. Newer systems in larger buildings may be able to handle high efficiency filters (usually over 80% efficient), which are more effective in removing the very small particles emitted from vehicles.
- Work with local traffic officials to limit heavy bus and truck traffic nearby during the day if the roads are under local control.



❖ **Are there other guidelines for childcare centers?**

- California has laws restricting new schools within 500 feet of freeways or busy traffic corridors, with some exceptions. Although, there are no laws for childcare centers, it makes sense to follow these guidelines, if at all possible.
- Air pollutants from facilities such as ports, rail yards, chrome plating facilities, and some dry cleaners may also cause air quality problems nearby.
- The Air Resources Board has guidelines on reasonable distances between sources of pollution and homes. These land use guidelines can help local governments decide what sites are best for places like homes, childcare centers, playgrounds, and senior centers. For more information, see "Resources" below.

❖ **Childcare centers located near busy roads can take additional steps to decrease children's exposures.**

- If your building has a heating, ventilation, and air conditioning (HVAC) system, make sure it receives routine maintenance, especially changing filters. HVAC systems usually work best when windows and outside doors remain closed. Ask your building manager about the guidelines for proper HVAC operation and maintenance.
- Fix building leaks that allow outdoor air to flow indoors. Some local utilities provide free inspections and advice for reducing leakage.
- Remember that mold, cigarette smoke, cooking emissions, woodburning, chemicals from cleaning products, and fragrances released indoors can contribute to respiratory symptoms. For more information on indoor air quality, see "Resources" below.



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❖ **Should the ventilation system be turned off to decrease outdoor air exchange if there is outdoor air pollution?**

No. The HVAC system for your building is designed to provide adequate ventilation. Turning off the HVAC system will **increase** levels of indoor air pollutants.

❖ **Will a portable air filtration system or air cleaner help?**

Fine particles from traffic exhaust are of special concern. Portable air filtration systems with high efficiency particulate air (HEPA) filters can reduce particle levels in a small space. However, they must be rated for the room size, and filters must be changed regularly in order to be effective. Most do not remove gaseous pollutants. There are other types of air cleaners. However, they vary in their effectiveness, and some may produce harmful levels of ozone. Ozone is an irritant gas that can damage the lungs; thus we recommend avoiding air cleaners that purposefully generate ozone and urge caution when using those that emit ozone as a by-product. For more on air cleaners see “Resources” below.

❖ **What is being done to decrease children’s exposure to traffic pollution?**

ARB is working on many strategies to decrease air pollution from motor vehicles, ranging from cleaner fuels to lower tailpipe emission standards. For more information, see the ARB website listed in “Resources”.

❖ RESOURCES

California Air Resources Board (ARB)

- General information on outdoor and indoor air pollution (800) 242-4450 or (916) 322-2990
<http://www.arb.ca.gov/research/health/health.htm>
<http://www.arb.ca.gov/research/indoor/indoor.htm>

- Air Cleaners
<http://www.arb.ca.gov/research/indoor/aircleaners.htm>
- Air Quality and Land Use Handbook: A Community Health Perspective
<http://www.arb.ca.gov/ch/landuse.htm>

California Department of Health Services

- Indoor Air Quality , Air Cleaners
<http://www.cal-iaq.org/>

Other Resources:

- US EPA: Indoor Air Quality Information Clearinghouse (800) 438-4318
<http://www.epa.gov/iaq/index.html>
- Consumer Reports on Air Cleaners
<http://www.consumerreports.org/cro/appliances/air-cleaners-1005/overview.htm>
- US EPA, asthma triggers information (866) NO-ATTACKS
<http://www.epa.gov/iaq/asthma/triggers.html>
- American Lung Association of California (510) 638-LUNG <http://www.californialung.org/>

Office of Environmental Health Hazard Assessment

- Information on the OEHHHA Traffic Study and traffic fact sheets for parents, schools, and childcare providers are available at
http://www.oehha.ca.gov/public_info/public/kids/airkidshome.html

For more information please contact us at:

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